

**AMENDMENTS TO THE CLAIMS**

Please amend the claims as shown below. A complete listing of the claims in this case, with their status, is shown below.

1-135. (Cancelled)

136. **(Currently amended)** A method comprising:

- (a) contacting a candidate compound with a G protein-coupled receptor comprising an amino acid sequence having at least 95% identity to amino acids 991 to 1,346 of SEQ ID NO:2, wherein said GPCR is present on a cell or an isolated membrane thereof;
- (b) determining ~~that the ability of the compound to~~ **inhibits signaling by** ~~modulate~~ said G protein-coupled receptor, and
- (c) determining if ~~the said compound has an activity that~~ **inhibits hypertrophy of** ~~a in the heart cell~~.

137. **(Currently amended)** The method of claim 136, wherein element (c) comprises:

- (i) contacting ~~[[a]] the compound which modulates the G protein-coupled receptor in (b) in vitro~~ with a cardiomyocyte cell **in vitro**; and
- (ii) determining whether the compound ~~modulates~~ **inhibits** hypertrophy of the cardiomyocyte cell.

138. **(Currently amended)** The method of claim 137, wherein the method comprises measuring **the** size of the cardiomyocyte cell or **the** expression of atrial natriuretic factor (ANF) by the cardiomyocyte cell.

139. **(Currently amended)** The method of claim 136, wherein element (c) comprises:

- (i) administering ~~[[a]] the compound which modulates the G protein-coupled~~

~~receptor in (b)~~ to a mammal; and

(ii) determining whether the compound **inhibits hypertrophy of the heart of**  
~~modulates heart function in~~ the mammal.

140. **(Currently amended)** The method of claim 139, wherein the mammal is a rat, **a** mouse or **a** pig ~~model of heart disease~~.

141. (Previously presented) The method of claim 139, wherein element (ii) comprises evaluating congestive heart failure, congestive cardiomyopathy, heart hypertrophy, left ventricular hypertrophy, right ventricular hypertrophy or hypertrophic cardiomyopathy.

142. (Previously presented) The method of claim 136, wherein the method comprises identifying an inverse agonist of the receptor.

143. (Previously presented) The method of claim 136, wherein the method comprises identifying an antagonist of the receptor.

144. (Withdrawn – Currently amended) A method comprising:

(a) contacting a candidate compound *in vitro* with a plurality of cardiomyocyte cells comprising a G protein-coupled receptor that comprises an amino acid sequence having at least 95% identity to amino acids 991 to 1,346 of SEQ ID NO:2;

(b) determining ~~**that** the ability of~~ the compound **reduces** ~~to reduce~~ a level of expression of the G protein-coupled receptor in said plurality of cardiomyocyte cells; and

(c) determining if ~~the said~~ compound ~~**has an activity that**~~ inhibits hypertrophy **of**  
**a** ~~in the heart~~ **cell**.

145. (Withdrawn – Currently amended) The method of claim 144, wherein element (c) comprises:

(i) administering **the** ~~[[a]]~~ compound ~~which reduces a level of expression of~~

~~the G protein-coupled receptor in said plurality of cardiomyocyte cells in (b) to a~~  
mammal; and

(ii) determining whether the compound **inhibits hypertrophy of the heart of**  
~~modulates heart function in~~ the mammal.

146. (Withdrawn – Currently amended) A method comprising:

(a) administering a candidate compound to a non-human mammal  
having a genome that is modified to provide for expression of a G protein-  
coupled receptor comprising an amino acid sequence having at least 95%  
identity to amino acids 991 to 1,346 of SEQ ID NO:2; and

(b) determining if said compound ~~has an activity that~~ inhibits hypertrophy in the  
heart **of the non-human animal**.

147. (Withdrawn – Currently amended) The method of claim 146, wherein said  
genome is modified to provide for selective expression of the G protein-coupled receptor in **a**  
**cardiomyocyte** cardiomyocytes.

148. (Withdrawn) A cultured cardiomyocyte cell comprising a recombinant nucleic  
acid encoding a G protein-coupled receptor comprising an amino acid sequence having at  
least 95% identity to amino acids 991 to 1,346 of SEQ ID NO:2.

149. (Withdrawn) A non-human mammal having a genome that is modified to  
provide for selective expression of a G protein-coupled receptor comprising an amino acid  
sequence having at least 95% identity to amino acids 991 to 1,346 of SEQ ID NO:2 in  
cardiomyocytes.

150. (Withdrawn) A non-human mammal having a genome that is modified to  
provide for selective inactivation of a mammalian RUP40 gene in cardiomyocytes.

151. (Withdrawn) A method of treating or preventing a heart disease selected from heart hypertrophy, left ventricular hypertrophy, right ventricular hypertrophy and hypertrophic cardiomyopathy, comprising administering to a mammal in need thereof a therapeutically effective amount of an inverse agonist or antagonist of the mammalian RUP40 G protein-coupled receptor or of a pharmaceutical composition comprising the inverse agonist or antagonist and a pharmaceutically acceptable carrier.

152. (Withdrawn) A method of inhibiting cardiomyocyte hypertrophy, comprising administering to a mammal in need thereof a therapeutically effective amount of an inverse agonist or antagonist of the mammalian RUP40 G protein-coupled receptor or of a pharmaceutical composition comprising the inverse agonist or antagonist and a pharmaceutically acceptable carrier.

153. (Withdrawn) The method of claim 152, wherein the method inhibits cardiomyocyte hypertrophy in congestive heart failure or congestive cardiomyopathy.

154. (Withdrawn) The method of claim 152, wherein the method inhibits cardiomyocyte hypertrophy in post-myocardial infarction remodeling.

155. (Cancelled)

156. (**Currently amended**) The method of **claim 139** ~~claim 155~~, wherein element (ii) comprises evaluating ~~cardiomyocyte~~ hypertrophy **of the heart** in congestive heart failure or congestive cardiomyopathy.

157. (**Currently amended**) The method of ~~claim 155~~ **claim 139**, wherein element (ii) comprises evaluating ~~cardiomyocyte~~ hypertrophy **of the heart** in post-myocardial infarction re-modeling.

158. (New) The method of claim 136, wherein the signaling is production of a reporter protein by a cell.

159. (New) The method of claim 136, wherein said signaling is production of IP<sub>3</sub> in a cell.